

PATENT SPECIFICATION

DRAWINGS ATTACHED

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COMPLETE SPECIFICATION

Motor Vehicle Body Panel

We, FORD MOTOR COMPANY LIMITED, of 88 Regent Street, London, W.1, a British Company, do hereby declare the invention for which we pray that a patent may be granted 5 to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

In a motor vehicle according to this invention a body panel is made of a transparent material and is rendered partially opaque and a desired colour by means of a grid associated with the panel.

The desired colour is usually the same colour as the rest of the body. To render the material partially opaque the grid usually occupies between 30% and 50% of the area of the panel. The transparent material is conveniently clear acrylic plastics. The grid may be separate from the transparent material but 10 is conveniently molded integrally with and embedded in the transparent material.

Lamps in vehicles are usually covered by their own separate transparent covers which may be either clear or coloured. The panel used in the vehicle of this invention may conveniently replace the separate transparent covers so that the lamps when not burning are invisible. If the lamp is required to be a certain colour, then a filter of that colour 15 may be interposed between the lamp and the panel.

The invention is hereinafter particularly described with reference to the accompanying drawings in which:

Figure 1 is a perspective view of the rear of a motor vehicle;

Figure 2 is a sectional side elevation of vehicle rear shown in Figure 1;

Figure 3 is an isometric view of a portion of a decorative body panel constructed in accordance with this invention;

Figure 4 is an isometric view of a portion

of a colour grid forming part of the panel; and

Figure 5 is a schematic view illustrating the passage of light from a lamp through the colour grid illustrated in Figure 4.

Figure 1 illustrates a motor vehicle body 10 having a panel 12. The panel 12 conceals the taillights of the vehicle, and appears to the human eye to be constructed of material identical to the other body panels, such as the rear deck lid 14. The panel 12 permits a clean and uncluttered appearance for the rear of the vehicle 10.

The panel 12 (Figure 2) is located between the rear deck lid 14 and the bumper 16 of the vehicle and is mounted on a support member 18. The other side of the support member 18 carries a reflector 24 in which a lamp 20 is mounted in an aperture 25. The lamp 20 is electrically connected to a battery by leads 22 and coloured light filter 26 is mounted between the lamp 20 and the panel 12. The panel 12 may be constructed from any suitable transparent material, such as an acrylic plastics sheet 13. An opaque colour grid 28, extending coextensively with the sheet 13 and comprising woven wire cloth constructed of individual wire strands 28a is mounted integrally with an embedded in the acrylic sheet 13. The colour grid 28 is painted, as with enamel, a desired colour and is constructed such that panel 12 is opaque over 30 to 50 per cent of its area for reasons that will be discussed in detail below. The colour grid also may comprise paint filled grooves in the transparent sheet 13 or embedded strands of wire painted a suitable colour, as well as the wire cloth illustrated in the drawings. It is not necessary that the colour grid be of a criss-cross configuration as shown in the drawings. A series of parallel colour grid elements would suffice. Also, al-

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though the colour grid is joined to or embedded in the sheet 13, these two members need not actually be connected.

- 5 The wire cloth colour grid 28 should be of a sufficiently small mesh so that the human eye will integrate the coloured light reflected from the colour grid, thereby giving the sheet 13 the appearance of a solid opaque member having the colour of the colour grid. This construction of colour grid 28 causes the composite panel 12 to appear to the human eye to be identical with the other painted sheet metal body panels of the vehicle 10.

In certain usages of the panel 12, such as 15 when the colour grid 28 is a light colour, i.e. white, the transparency of the sheet 13 may allow light emitted from a source exterior of the vehicle to pass through the panel 12 and be reflected by the structure interior of the panel. This passage of light allows the 20 image of the interior structure to be visible to the eye and would destroy the desired effect of concealing the vehicle taillight structure. The possibility of this condition existing is 25 eliminated by coating the interior surface 30 of the sheet 13 with a light diffusing substance that destroys the image of the interior assembly structure as reflected light passes from the structure through the coating. It 30 may be said that such a coating renders the normally transparent sheet 13 translucent. A suitable light diffusing substance for this purpose is a microscopic glass bead coating available commercially as a "Lenscreen" that may be spread on the interior surface 30 of the sheet 13.

When the lamp 20 is extinguished, the panel 12 resembles the other painted sheet metal body panels. However, when the lamp 20 is 40 burning, light rays from the lamp pass directly from the reflector 24 through the filter 26 where this light assumes the colour of filter 28, such as red for a vehicle taillight. This light passing through the filter 26 causes the 45 projection of an image, corresponding to the shape of the filter 26, on the surface 30. This coloured light is also emitted through the aperture 28b in the colour grid and thus passes through the panel 12 and may be observed 50 by the human eye exterior of the vehicle—as is indicated by solid lines 32 in Figure 5.

Other light rays, illustrated schematically by the dotted line 34 in Figure 5, are emitted 55 from the lamp 20 and are reflected by wires 28a of the colour grid 28 to the reflector 24 and thence to the exterior of the panel 12. Upon striking elements 28a, these light rays assume the colour of the elements 28a and are then subsequently coloured by their double 60 passage through the filter 26. However, the intensity of light rays 32 is much greater than the light rays 34. The human eye thus perceives only light that is the true colour of the filter 26.

65 The mesh size mesh of the wire cloth is

important in that it affects the percentage area of the panel 12 that is opaque as a result of the presence of the colour grid elements 28a, as compared to the percentage of the panel 12 that is translucent due to the apertures 28b. As described above, this percentage opaqueness should be in the range of 30 to 50 per cent in order that the human eye may integrate the light reflected from colour grid elements 28a to a sufficient degree that the panel 12 appears to a solid member, similar to the other painted sheet metal panels of the motor vehicle.

Thus a seemingly opaque panel is, in actuality, partially translucent. These characteristics of the panel allow it to be used as a motor vehicle body panel that conceals the lights of the vehicle when they are extinguished, while permitting light emitted from the lights to be perceived readily by the human eye.

WHAT WE CLAIM IS:—

1. A motor vehicle in which a body panel is made of a transparent material and is rendered partially opaque and a desired colour by means of a grid associated with the panel.

2. A motor vehicle according to claim 1 in which the grid elements occupy between 30% and 50% of the area of the panel.

3. A motor vehicle according to claim 1 or claim 2 in which the grid is painted woven wire cloth.

4. A motor vehicle according to any of the preceding claims in which the transparent material is clear acrylic plastics.

5. A motor vehicle in which one surface of the transparent material is coated with a light diffusing coating such that the material is rendered translucent.

6. A motor vehicle according to claim 5 in which the coating is a microscopic glass bead coating.

7. A motor vehicle according to any of the preceding claims in which the grid is moulded integrally with the material so that it is embedded in the material.

8. A motor vehicle according to any of the preceding claims in which the panel covers a lamp and is such that light from the lamp can pass through the panel.

9. A motor vehicle according to claim 8 in which a light filter is interposed between the lamp and the panel so that light of the desired colour is transmitted through the panel.

10. A motor vehicle according to claim 1 and having a body panel constructed substantially as hereinbefore particularly described with reference to Figures 1, 3 and 4 of the accompanying drawings.

11. A motor vehicle according to claim 10 in which the body panel is associated with a lamp in the manner substantially as hereinbefore particularly described with reference to

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Figures 2 and 5 of the accompanying drawings.

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COMPLETE SPECIFICATION

1 SHEET

*This drawing is a reproduction of
the Original on a reduced scale*

FIG.1

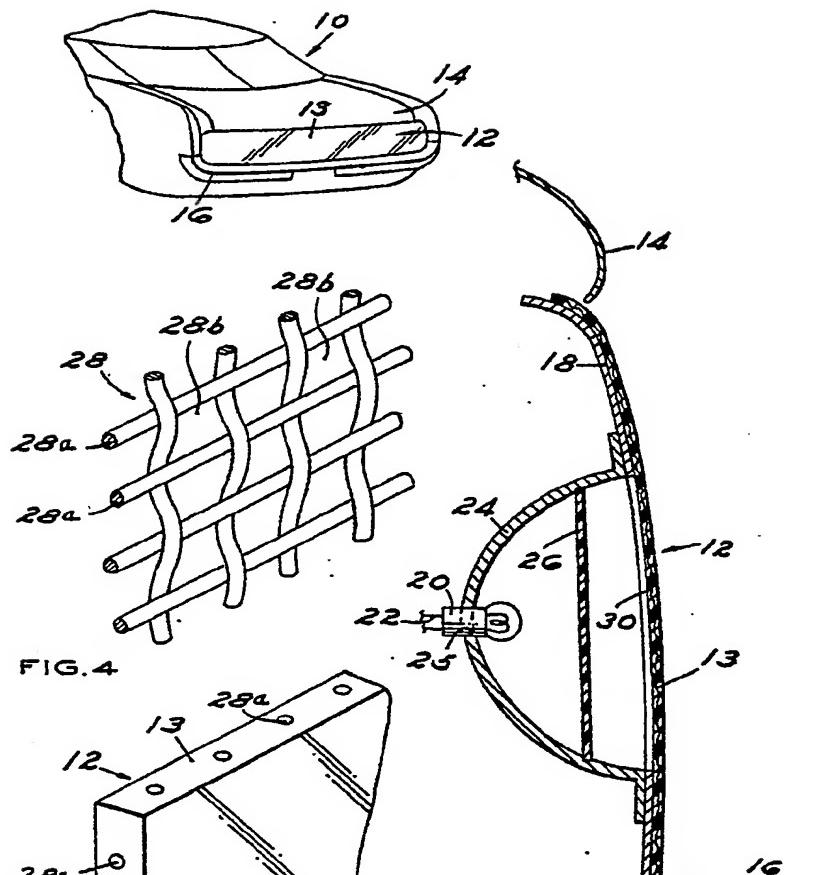


FIG.4

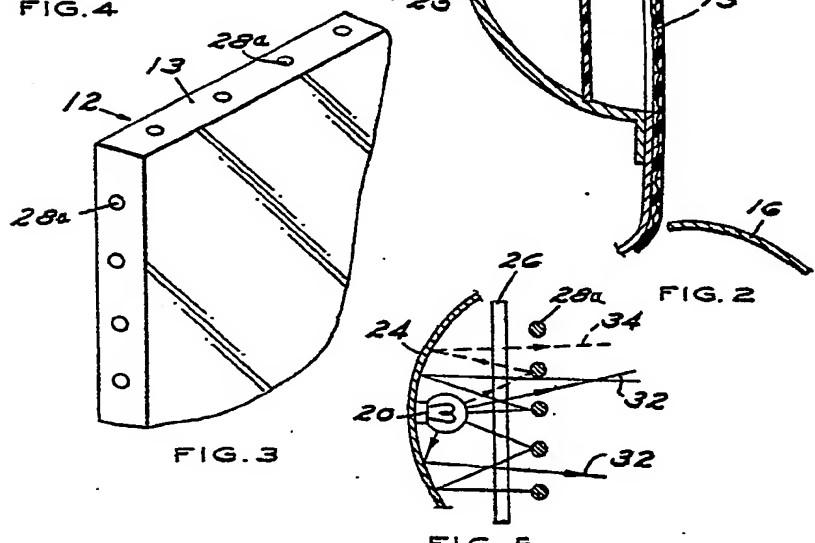


FIG.3

FIG.5

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COMPLETE SPECIFICATION

1 SHEET

This drawing is a reproduction of
the Original on a reduced scale

FIG. 1

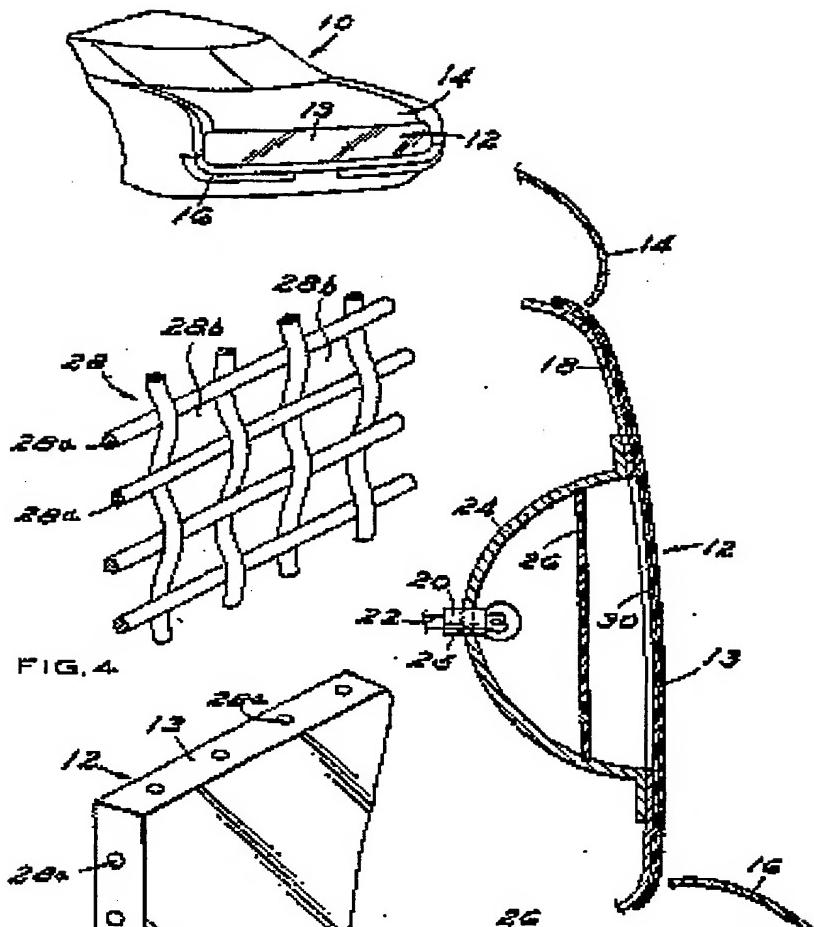


FIG. 4

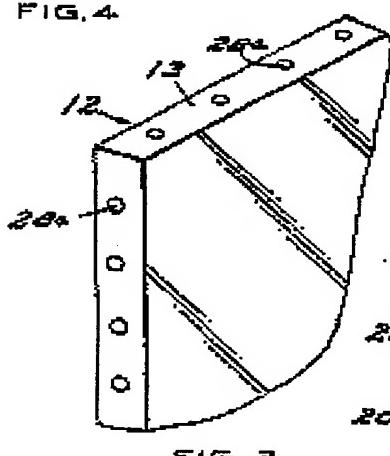


FIG. 3

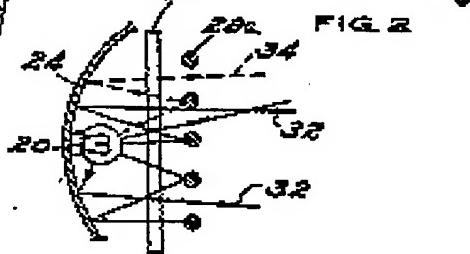


FIG. 2

FIG. 5